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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,242	12/20/2001	Brian Christian Orr	V201-0077	2148

7590 05/19/2004

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EXAMINER

HO, HA DINH

ART UNIT	PAPER NUMBER
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3681

DATE MAILED: 05/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/028,242	ORR ET AL.	
	Examiner	Art Unit	
	Ha D. Ho	3681	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This Office Action is responsive to Applicant's Response filed 03/22/04. Claims 1-10 are currently pending, in which claim 7 was withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper filed 02/07/03.

#### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Prior Art, Fig. 2, in view of Glaze et al (US 4,733,578).

Applicant Prior Art, Fig. 2, shows a differential having all the limitations recited in claims 1, 3-6 and 8-10 with the exception that the radius (R) is longer than the distance from the surface (28a) to the casing centerpoint (21) such that the differential chamber is wider in the rotational direction of the pinion shaft (20) than in the rotational direction of the casing (12).

Glaze et al show an embodiment of the differential (see Fig. 2) that has the same feature as of Applicant Prior Art, Fig. 2. Also, Glaze et al show another embodiment (see col. 4, lines 9-11) such that the differential chamber is wider in the rotational direction of the casing (80) than

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in the rotational direction of the pinion shaft (88) (i.e., making the radius R1 less than the radius R2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the differential of Applicant Prior Art, Fig. 2, such that the differential chamber is wider in the rotational direction of the casing than in the rotational direction of the pinion shaft in view of Glaze et al in order to reduce the overall width of the differential (in the rotational direction of the pinion shaft) (note that by making the radius R2 less than the radius R1, the overall axial width is reduced, see col. 3, lines 67-68, therefore, by making the radius R1 less than the radius R2, the overall width in the rotational direction of the pinion shaft is reduced). Note that the modified differential would have all the features as recited in claims 1, 3-6 and 8-10.

Regarding claim 2, it would have been obvious to one of ordinary skill in the art at the time the invention was made to select the ratio of the radius of one spherical surface to the offset distance be at 30, since such a selection would have involved a mere change in the size of a component, e.g., how wide in the axial direction the differential chamber is. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

### ***Response to Arguments***

4. Applicant's arguments, see page 2 line 19 to page 3 line 16, filed 03/22/04, with respect to the rejection of claims 1, 3-6 and 8-10 under 35 U.S.C. 102(b) as being anticipated by Iwata (JP 61-149652), and the rejection of claim 2 under 35 U.S.C. 103(a) as being unpatentable over

Iwata (JP 61-149652), have been fully considered and are persuasive. These rejections have been withdrawn.

5. Applicant's arguments, see page 3 line 17 to page 4 line 20, with respect to the rejection of claims 1-6 and 8-10 under 35 U.S.C. 103(a) as being unpatentable over Applicant Prior Art, Fig. 2, in view of Glaze et al. (US 4,733,578), have been fully considered but they are not persuasive.

Applicant states "Glaze includes one sentence relating to making the differential wider in the direction of the casing without any teaching, suggestion or inference as to why such a modification is desirable."

Note that Glaze teaches a first embodiment (see Fig. 2) wherein the radius R2 is made less than the radius R1 (see col. 3 line 67 to col. 4 line 9) to reduce **the overall axial width** (i.e., the width in the rotational direction of the casing). Consequently, by making the radius R1 less than the radius R2, **the overall radial width** (i.e., the width in the rotational direction of the pinion shaft) is reduced, thus the space in the rotational direction of the pinion shaft and the length of the pinion shaft are reduced. Glaze clearly teaches "it may be desirable to have the radius R1 be less than the radius R2" (see col. 4, lines 9-11).

The combination of Applicant Prior Art, Fig. 2, and Glaze would have a chamber of the differential casing wider in the rotational direction of the casing, therefore all of the features of claims 1, 3-6 and 8-10 would be included.

Regarding claim 2, since the combination of Applicant Prior Art, Fig. 2, and Glaze infer the features of independent claim 1, selecting a ratio of the radius of one spherical surface to the offset distance be at 30 would have been obvious.

### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

### ***Communication***

7. Submission of your response by facsimile transmission is encouraged. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9326 for regular communications and (703) 872-9327 for After Final communications. Recognizing the fact that reducing cycle time in the processing and examination of patent applications will effectively increase a patent's term, it is to your benefit to submit responses by facsimile transmission whenever permissible. Such submission will place the response directly in our examining group's hands and will eliminate Post Office processing and delivery time as well as the PTO's mail room processing and delivery time. For a complete list of correspondence not permitted by facsimile transmission, see M.P.E.P. 502.01. In general, most responses and/or amendments not requiring a fee, as well as those requiring a fee but charging such fee to a deposit account, can be submitted by facsimile transmission. Responses requiring a fee which applicant is paying by check should not be submitting by facsimile transmission.

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separately from the check. Responses submitted by facsimile transmission should include a Certificate of Transmission (M.P.E.P.. 512). The following is an example of the format the certification might take:

I hereby certify that this correspondence is being facsimile transmitted to  
the Patent and Trademark Office on \_\_\_\_\_  
(Date)

Typed or printed name of person signing this certificate:

\_\_\_\_\_  
\_\_\_\_\_  
(Signature)

If your response is submitted by facsimile transmission, you are hereby reminded that the original should be retained as evidence of authenticity (37 CFR 1.4 and M.P.E.P.. 502.02). Please do not separately mail the original or another copy unless required by the Patent and Trademark Office. Submission of the original response or a follow-up copy of the response after your response has been transmitted by facsimile will only cause further unnecessary delays in the processing of your application; duplicate responses where fees are charged to a deposit account may result in those fees being charged twice.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Examiner Ho whose telephone number is (703) 305-0738. The examiner can normally be reached on Monday-Friday from 7:30 A.M. to 5:00 P.M. Eastern Standard Time. If attempts to reach the examiner by phone are unsuccessful, the examiner's supervisor, Mr. Charles Marmor, can be reached at (703) 308-0830. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-2168.

Ha Ho 5/14/04

Ha Ho  
Primary Examiner  
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